Nicholas Freeman Mehrle

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Education

Johns Hopkins University	**Baltimore, MD**
M.A. Physics and Astronomy	5/2016
B.S. Physics	5/2016

- **Additional Majors:** Mathematics & Applied Mathematics and Statistics
- **GPA:** 3.91/4.0
- Departmental and general honors
- Dean's list award every semester

Massachusetts Institute of Technology	**Cambridge, MA**
Ph.D. Candidate Physics (Astronomy)	Since 09/2017

- **GPA:** 5.0/5.0
- **Advisor:** Professor Ian Crossfield

Miscellaneous

Computer Skills:	Python, Java, JavaScript, C, C++, Matlab, Mathematica, R, HTML, CSS, LaTeX, Solid-Works, VBA	
Organizations:	Phi Beta Kappa, Sigma Pi Sigma, MIT Sidewalk Astrogazers, MIT SEDS	
Testing:	Physics GRE - 960/990 (92nd percentile)	
	General GRE - V: 165/170 (95th), Q: 169/170 (97th), W: 5.5/6 (98th)	
Other:	Technician class ham radio certified	
Teaching:	Tutor, Introductory Physics, Johns Hopkins University	2013-2014
	TA, Differential Equations Johns Hopkins University	Fall 2015
	"The Flat Earth and Debunking Conspiracy Theories", MIT SPLASH	11/19/2017
	"Rebiuld", MIT IAP non-credit activity	January 2017

Papers

- Thomas Essinger-Hileman, et al. "CLASS: the Cosmology Large Angular Scale Surveyor ", *Proc. SPIE* 9153, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII, 91531I (July 23, 2014); doi:10.1117/12.2056701

- John W. Appel, et al. "The Cosmology Large Angular Scale Surveyor (CLASS): 38-GHz Detector Array of Bolometric Polarimeters ", *Proc. SPIE* 9153, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII, 91531J (July 23, 2014); doi:10.1117/12.2056530

- *Design of the Cosmology Large Angular Scale Surveyor (CLASS) Polarization Modulators*. Master's thesis. Advisor: Tobias Marriage. Unpublished.

Employment & Research

Massachusetts Institute of Technology	**Cambridge, MA**
Graduate Student Researcher	09-2017 - Present

- Characterizing atmospheres of extra-solar planets via high resolution ground based spectroscopy

University of Maryland	**College Park, MD**
Web Developer - Department of Astronomy	12/2016 - 09/2017

- Developer for the Astronomy Workshop Extragalactic project
- Design online educational tools to illustrate astronomy concepts astronomy concepts

Optiver US LLC   **Chicago, Il**
Derivatives Trader   7/2016 - 10/2016
  - Worked as high frequency options market maker including options pricing
  - Implemented machine-learning techniques to develop trading strategies
  - Performed time series analysis of market data

Johns Hopkins University   **Batimore, MD**
Research Assistant - Department of Physics and Astronomy   5/2013 - 5/2016
  - Constructed variable delay polarization modulator for microwave band telescope
  - Wrote master's thesis on telescope design and physics of Cosmic Microwave Background
  - Developed analog-to-digital sensor system

CERN   **Geneva, CH**
Research Assistant - CMS Experiment   1/2015 - 5/2015
  - University of Michigan Semester at CERN program scholar
  - Performed statistical analysis to discriminate production methods of Higgs boson
  - Contributed to statistical software package used on the CMS experiment

Johns Hopkins University Applied Physics Lab   **Laurel, MD**
Technical Intern - Applied Concepts and Technology Group   5/2014 - 8/2014
  - Developed and tested of feature estimation algorithms
  - Improved graphical UI of large scale simulation environment
  - integrated radar model into simulation environment